CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.13/JCR/CSR-05/037b/CEMENT/2016-17 Date: 13.05.2016

TEST REPORT ON CEMENT

* CUSTOMER	:	**Asst. Executive Engineer**, Shettyhalli Sub Division, BBMP, Bangalore.
*AGENCY	:	**Mr. J.C. Ramachandra,** #59, 10th C Cross, WOC Road, Bangalore – 86.
*NAME OF THE WORK	:	Construction of RCC drain in 4th and 5th Cross road North side at Prashanthanagara in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.
*REFERENCE	:	AEE/SSD/QC/25/2016-17 Dated: 12.05.2016
SAMPLE ID	:	Cement
SAMPLE RECEIVED ON	:	12.05.2016
PERIOD OF TESTING	:	12.05.2016 to 13.05.2016

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	490 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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****

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Job No.: CTCE/BBMP/W.No.13/JCR/CSR-05/037b/SAND-Gradation/2016-17 : 13.05.2016

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. J.C. Ramachandra,**
#59, 10th C Cross, WOC Road, Bangalore – 86.

*** Name of Work** : Construction of RCC drain in 4th and 5th Cross road North side at Prashanthanagara in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.

Reference : AEE/SSD/QC/25/2016-17 Dated: 12.05.2016

Technical Reference : IS : 2386 Part 1 - 1963 RA-2007

Sample ID : Fine Aggregates

Sample Received on : 12.05.2016

Date of Testing : 13.05.2016

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	94.80	90-100	90-100	90-100	95-100
2.36	76.80	60-95	75-100	85-100	95-100
1.18	57.00	30-70	55-90	75-100	90-100
600 Micron	28.50	15-34	35-59	60-79	80-100
300 Micron	12.90	5-20	8-30	12-40	15-50
150 Micron	4.90	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Job No.: CTCE/BBMP/W.No.13/JCR/CSR-05/037b/AGG/GR/2016-17 : 13.05.2016

TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. J.C. Ramachandra,**
#59, 10th C Cross, WOC Road, Bangalore – 86.

*** Name of Work** : Construction of RCC drain in 4th and 5th Cross road North side at Prashanthanagara in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.

Reference : AEE/SSD/QC/25/2016-17 Dated: 12.05.2016

Technical Reference : IS : 2386 Part 1 -1963 RA-2007

Sample ID : Coarse Aggregates (40mm)

Sample Received on : 12.05.2016

Date of Testing : 13.05.2016

Total Wt. of Aggregates in gms= **7000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.43	95-100	85-100
20	37.14	30-70	0-20
10	17.86	10-35	0-5
4.75	2.43	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

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Job No.: CTCE/BBMP/W.No.13/JCR/STEEL/2016-17 13.05.2016

TEST REPORT ON REINFORCEMENT STEEL

Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	:	**Mr. J.C. Ramachandra,** #59, 10th C Cross, WOC Road, Bangalore – 86.
Name of the Work	:	Construction of RCC drain in 4th and 5th Cross road North side at Prashanthanagara in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.
Reference	:	AEE/SSD/QC/25/2016-17 Dated: 12.05.2016
Date of Test	:	13.05.2016
Technical Reference	:	IS: 1786-2008

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Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	10	0.62	514	557	13.35	O.K	O.K

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Job No.: CTCE/BBMP/W.No.13/JCR/CSR-05/037b/CUBE/2016-17 13.06.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	: **Mr. J.C. Ramachandra,** #59, 10th C Cross, WOC Road, Bangalore – 86.
* Name of the work	: Construction of RCC drain in 4th and 5th Cross road North side at Prashanthanagara in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	: AEE/SSD/QC/25/2016-17 Dated: 12.05.2016
* Sample ID	: RCC Drain Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
* Grade of Concrete	: M_{20}
Compressive Strength as on	: 28th day
Sample Received on	: 13.06.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	16.05.2016	13.06.2016	8.189	485.5	21.58
2	16.05.2016	13.06.2016	8.235	490.3	21.79
3	16.05.2016	13.06.2016	8.325	512.3	22.77

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Job No.: CTCE/BBMP/W.No.13/JCR/CSR-05/037b/CUBE/2016-17 13.06.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* **Customer** : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

* **Agency** : **Mr. J.C. Ramachandra,**
#59, 10th C Cross, WOC Road, Bangalore – 86.

* **Name of the work** : Construction of RCC drain in 4th and 5th Cross road North side at Prashanthanagara in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.

* **Reference** : AEE/SSD/QC/25/2016-17 Dated: 12.05.2016

* **Sample ID** : RCC Drain Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

* **Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 13.06.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	16.05.2016	13.06.2016	8.125	478.3	21.26
2	16.05.2016	13.06.2016	8.280	492.3	21.88
3	16.05.2016	13.06.2016	8.305	502.1	22.32

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Job No.: GTCE/BBMP/W.No.13/JCR/CSR-05/037b/CUBE/2016-17 14.06.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. J.C. Ramachandra,**
#59, 10th C Cross, WOC Road, Bangalore – 86.

*** Name of the work** : Construction of RCC drain in 4th and 5th Cross road North side at Prashanthanagara in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.

*** Reference** : AEE/SSD/QC/25/2016-17 Dated: 12.05.2016

*** Sample ID** : RCC Drain Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 14.06.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.05.2016	14.06.2016	8.122	483.3	21.48
2	17.05.2016	14.06.2016	8.256	502.2	22.32
3	17.05.2016	14.06.2016	8.320	512.4	22.77

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Job No.: CTCE/BBMP/W.No.13/JCR/CSR-05/037b/CUBE/2016-17 14.06.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. J.C. Ramachandra,**
#59, 10th C Cross, WOC Road, Bangalore – 86.

*** Name of the work** : Construction of RCC drain in 4th and 5th Cross road North side at Prashanthanagara in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.

*** Reference** : AEE/SSD/QC/25/2016-17 Dated: 12.05.2016

*** Sample ID** : RCC Drain Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 14.06.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.05.2016	14.06.2016	8.098	485.5	21.58
2	17.05.2016	14.06.2016	8.190	495.3	22.01
3	17.05.2016	14.06.2016	8.225	505.6	22.47

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Job No.: CTCE/BBMP/W.No.13/JCR/CSR-05/037b/Pre Cast Slab/2016-17 26.05.2016

TEST REPORT ON CONCRETE CORE (PRE CAST SLAB)

* Name of Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Name of Agency	:	**Mr. J.C. Ramachandra,** #59, 10th C Cross, WOC Road, Bangalore – 86.
* Name of work	:	Construction of RCC drain in 4th and 5th Cross road North side at Prashanthanagara in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.
Reference	:	AEE/SSD/QC/25/2016-17 Dated: 12.05.2016
Techinical Reference	:	IS:516-1959 (Reaffirmed 2008), SP-24:1983.
Sample ID	:	Pre cast slab
Sample Received on	:	20.05.2016
Date of Testing	:	26.05.2016

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	79.00	0.389	2507.80	1.58	0.955	32.30	16.45	17.77	16.97	21.21
2	50.00	80.00	0.396	2521.01	1.60	0.960	33.40	17.01	18.37	17.64	22.05
3	50.00	81.00	0.405	2546.48	1.62	0.965	33.60	17.11	18.48	17.83	22.29

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